The SINS 2022 Program is co-located with ISTAS22, incorporating 35 speakers from 10 countries over 4 time zones, beginning on the 10th November with Arizona at 9am local time, then London at 9pm at local time, and Sydney at 11am local time, and Hong Kong at 1pm local time.

In order to attend SINS22, you must register via Town Hall. You will be provided one zoom link for the whole day's proceedings. Registration is free.

Thursday 10 November 2022 – Securitization of the Person

9:00am AZ	***Session 1 (09:00am Arizona (MST), 11am EST, 4pm UTC, 3am +1 Sydney)*** *Securitization of the Person* Moderated by Kathleen Vogel
9:30am AZ	***Panel 1 (9:30am Arizona (MST), 11:30am EST, 4:30pm UTC, 3:30am +1 Sydney)*** *9.30am Discovery, Modeling and Interdiction of Human Trafficking Networks* Dominique Roe-Sepowitz, Jorge Sefair, Tony Grubesic and Arunabha Sen *10.00am COVID-19 and Emergencies as Determinants of Anti-Trafficking Efforts* Jean-Pierre Gauci and Noemi Maguglianin *10.30am Critical Collaboration: Combating Fragmentation and Duplication in Counter-Trafficking* Sherrie Caltagirone *11.00am Responsible AI for Addressing Human Security Challenges* Anjali Mazumder *11.30am Discussion* Open Floor *12.00pm Close*

Thursday 10 November 2022 – Securitization of Place

9:00pm London	***Session 2 (2:00pm Arizona (MST), 4pm EST, 9pm UTC, 8am +1 Sydney)*** *Securitization of Place* Moderated by Jeremy Pitt
9:05pm London	***Panel 2 (2:05pm Arizona (MST), 4:05pm EST, 9:05pm UTC, 8:05am +1 Sydney)*** *9.05pm Sustainable Smart Cities: Testbed Infrastructure and Human Behaviour* V. Cvetkovic, A. Fontan, M. Molinari, K.H. Johansson, P. Herman, M. Skoglund, H. Kjellström and C. Katzeff *9.25pm Counteracting the Global Labor Shortage Risk through the Human-AI Collaboration in Digital Recruiting* Olena Linnyk *9.45pm Ensuring Food Security through Menu Optimization - OPTIMEAL* Liselotte Schäfer Elinder, Patricia Eustachio Colombo *10.05pm Q&A (with Vlad, Olena, Liselotte)* *10.20 Break* *10.40pm Reimagining Digital Public Spaces and Artificial Intelligence for Deep Cooperation* Peter Lewis *11.00pm Energy Security* Stephen McArthur *11.20pm Respecting and Protecting Cultural Values in an Indigenous Virtual Reality Project* Holger Regenbrecht and Steven Mills *11.40pm Q&A (with Peter, Stephen, Holger and Steven)* *12.00am Close*

Friday 11 November 2022 – Securitization through Transdisciplinarity

11:00am Sydney	**Session 3 (5:00pm Arizona (MST), 7pm EST, 12am UTC, 11am Sydney)**
	Securitization through Transdisciplinarity
	Moderated by Roba Abbas and Mariana Zafeirakopoulos

11:05am Sydney	**Panel 3 (5:05pm Arizona (MST), 7.05pm EST, 12.05am UTC, 11.05am Sydney)**
	11.05am Climate Change, Critical Thinking and the New Normal
	Luis Kun
	12.00pm IEEE SSIT Open Discussion on Transdisciplinarity and Socio-Technical Considerations
	Roba Abbas, Katina Michael
	12.30pm Vulnerable Infrastructure, Secure Infrastructures?
	Lindsay Robertson
	1.00pm Necessity, Luxury, or Illegal Protest: A Transdisciplinary Review of Internet Access
	Rob Nicholls
	1.30pm A Transdisciplinary Lens on the Ethical Use of Artificial Intelligence
	Antonette Shibani
	2.00pm Calling in the System - Exploring Relational Ways of Knowing for More Secure Futures
	Mariana Zafeirakopoulos
	2.30pm Cyber-Biosecurity Threats and Risks: Mitigation Challenges and Transdisciplinary Solutions
	Patrick Walsh
	3.00pm Why Do We Need "Transdisciplinarity" and What are the Pressures Against It?
	Marcus Wigan
	3.30pm Close

Friday 11 November 2022 – Socio-Historical Origins of Securitization

1:00pm Hong Kong	***Session 4 (10pm Arizona (MST), 12am EST, 5am UTC, 4pm Sydney)*** *Socio-Historical Origins of Securitization* Moderated by Katina Michael
1:05pm Hong Kong	***Panel 4 (10:05pm Arizona (MST), 12:05am EST, 5:05am UTC, 4.05pm Sydney)*** *1.05pm Vulnerable Agents and State Complexity: Sustainable Development as the Ethical Standard for Securitization* Philip Chmielewski *1.30pm Democracy, Environment, and Technology – Interactions, Inter-Dependencies, and Implications for Theory, Policy, Practice and Politics* Elias Carayannis *2.00pm Atticus Finch 5.0: The Critical Role of Elders in Mediating Securitization and Inspiring the Next Generation of Public Interest Technologists* Jason Sargent *2.30pm Secure Localization in a Global Software Intensive System* Gopal Tadepalli *3.00pm Looking at Securitization as a Sociotechnical Activity: Lessons from a Cold-War Past* *3.30pm Uberveillance as an Apparatus of Control: Towards Insecurity* MG Michael, Katina Michael and Roba Abbas *4.00pm Close*

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Call for Papers

Securitization for Sustainability of People and Place: A Call to Transdisciplinarity

The Fifteenth Workshop on the Social Implications of National Security (SINS22)

Human Factors Series

Co-located with the IEEE International Symposium on Technology and Society (ISTAS22)

Venue: Hong Kong (virtual)

Date: 10 November - USA/UK; 11 November - Australia/HK

Duration: approx. 13 hours of educational seminar presentations in four locations

Organizers

- Roba Abbas, University of Wollongong (roba@uow.edu.au)*
- Katina Michael, Arizona State University (katina.michael@asu.edu)*
- Jeremy Pitt, Imperial College London
- Kathleen Vogel, Arizona State University
- Mariana Zafeirakopoulos, University of Technology, Sydney (mariana.zafeirakopoulos@student.uts.edu.au)*

* Corresponding

Program

1. Securitization of the Person Arizona 9:00am AZ
2. Securitization of Place London 9:00pm GMT
3. Securitization through Transdisciplinarity Sydney 11:00am AEDT
4. Socio-Historical Origins of Securitization Hong Kong 1:00pm HKT

An initiative of the IEEE SSIT Technical Committee on Socio-Technical Systems in cooperation with the Society Policy Engineering Collective (SPEC) at Arizona State University.

Abstract

The term "national security" can be defined in numerous ways in the context of defense. When we refer to national security in the military context, it usually means the way in which a defense force will securitize its national borders. However, securitization, can also be considered from a different perspective, that of applying a broader view of "security," beyond just military force and conflict. Increasingly, an all-hazards approach to national security has been considered in the literature whereby we refer to economic, environmental and energy security (Romm 1993), among other non-military facets (e.g., food, health, demographic, informational and resource as per Paleri (2008), and other aspects falling within transnational crime).

The significance of this broader perspective largely emerged after the Cold War ended, where many scholars believed it necessary to expand the notion of "security" to include transnational crime matters, such as human trafficking. Buzan et al. (1998), listed five distinguishing sectors relevant to securitization: the military sector, the political sector, the societal sector, the economic sector, and the environmental sector. Thus, we can refer to military security, political security, societal security, economic security, and environmental security. Securitization, based on this view, implies "survival across a number of dimensions" (Castle 1997: 4).

While national security is often approached from the position of military/defense applications, non-military forms of securitization require additional attention and investigation from an integrated perspective, calling on many disciplines and the emergence of transdisciplinary frameworks in order to understand the social implications of national security technology, in particular, across a range of contexts. Thus, this workshop considers how transdisciplinarity may aid in a holistic approach to appreciating the interdependencies that exist between various sectors of security, to ensure the securitization of people and place toward sustainability. This may involve consideration of national innovation system (Nelson 1993) contexts through a socio-technical transitions lens (Elzen, Geels et al., 2004) that may aid in the design of complex socio-technical infrastructures and architectures, in addition to other approaches that promote an all-hazards and comprehensive view of securitization.

A primary objective of this workshop is to explore the role that technology can play in achieving security of people and place, focusing on non-military aspects and securitization from the perspective of sustainability, values, empathy, and human-centered and philosophical approaches to securitization, while incorporating the link with the various sectors of securitization.

Themes to be addressed include, but are not limited to

- Definitions of securitization in the context of sustainability of people and place
- Contexts and sectors of social securitization and new security policy
- Non-military aspects of national security
- All hazards approach to national security, with an emphasis on social implications of technology
- The social implications of national security technologies in the context of sustainability
- Challenging the concept of "national" in "national security", to extend to other geographic areas and or the digital landscape
- Role of values such as human rights, care, peace, trust, respect in non-military securitization practices
- Engagement between a range of stakeholders (e.g., defense and community) regarding prevalent national security issues, e.g. biosecurity, peacekeeping, recycling, cybersecurity
- Human-centered and empathetic design approaches for addressing securitization related challenges
- Communication strategies for public engagement related to shared responsibility in tackling complex challenges
- Bridging the gap between conceptual issues and real-world experiences in the context of securitization toward sustainability
- Developing transdisciplinary language for addressing technology-related securitization challenges
- Transdisciplinary design frameworks for large-scale innovation systems focused on securitization
- Investing in prevention of major global challenges at the local level and understanding the long-term effects of non-participation in national security
- Sustainability in urban areas and risks to urban dwellers
- Integration of cultural values, belief systems, language, philosophical approaches, and practices in local (and especially remote) communities
- Migration patterns, especially of workers, between nation states
- Sustainable and secure supply chains
- The role of technology in the securitization of global supply chains
- Cyber-physical supply chain security
- Transnational crime prevention strategies through new approaches to securitization

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Citation: Roba Abbas, Katina Michael, Jeremy Pitt, Kathleen Vogel, Mariana Zafeirakopoulos, 10-11 November 2022, "Securitization for Sustainability of People and Place: A Call to Transdisciplinarity", *SINS22*, https://www.istas22.org/call-for-papers/sins22/

Table of Abstracts and Biographies

Securitization of the Person

Moderator
Kathleen Vogel, Arizona State University, USA

Session Abstract
According to UN resolution 66/290, human security calls for developing "people-centred, comprehensive, context-specific and prevention-oriented responses [to human security challenges] that strengthen the protection and empowerment of all people." In today's security environment, civil conflicts, mass migration, climate change, natural disasters, pandemics, and other emergent phenomena create multiple, often overlapping, instabilities that create human insecurity. These require solutions that cross national borders and involve government, industry, academia, civil society, and the larger public. One facet of human insecurity is the global crime of human trafficking. Its definition is the use of force, fraud, or coercion to exploit a person for profit; it involves both sex and labor trafficking. Estimates of the prevalence of human trafficking vary because it is largely a hidden crime. There is a need for more multidisciplinary experts to identify, gather, and analyze data about human trafficking at the local, regional, and international level. This is the focus of the "securitization of the person" session: How can we analyze patterns of human trafficking in the United States and around the world to understand how the increased prevalence of human trafficking at particular hotspots can be explained and mitigated or stopped altogether?

Biographical Note
Kathleen M. Vogel is Professor in the School for the Future of Innovation in Society at Arizona State University (ASU). She has served in the U.S. Department of State as a Jefferson Science Fellow in the Office to Monitor and Combat Trafficking in Persons and as William C. Foster Fellow in the Office of Proliferation Threat Reduction in the Bureau of Nonproliferation. Vogel has also spent time as a visiting scholar at the Woodrow Wilson International Center for Scholars, Cooperative Monitoring Center, Sandia National Laboratories, and the Center for Nonproliferation Studies, Monterey Institute of International Studies. Vogel holds a Ph.D. in bio-physical chemistry from Princeton University. Vogel's overall research interests relate to the study of knowledge production on security and intelligence problems.

Related Works
- Vogel, K.M. and Tyler, B.B., 2019. Interdisciplinary, cross-sector collaboration in the US Intelligence Community: lessons learned from past and present efforts. Intelligence and National Security, 34(6), pp.851-880.
- Jameson, J.K., Joines, S.M., Tyler, B.B. and Vogel, K.M. eds., 2020. Facilitating interdisciplinary collaboration among the intelligence community, academy, and industry. Cambridge Scholars Publishing.

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- Vogel, Kathleen M. 2013, Phantom menace or looming danger? : a new framework for assessing bioweapons threats / Kathleen M. Vogel Johns Hopkins University Press Baltimore.
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- Vogel, K., Balmer, B. L., Weiss Evans, S., Kroener, I., Matsumoto, M., & Rappert, B. (2016). Knowledge and security, in The Handbook of Science and Technology Studies. MIT Press.

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- https://projectqsydney.com/multimedia/q1-interview-with-kathleen-vogel/ (ProjectQ)
- https://www.youtube.com/watch?v=b2qtFxI7NpY (STS UCL)
- https://vimeo.com/145682128 (Synbio Interview Series)
- https://www.youtube.com/watch?time_continue=1&v=aOi3VROIdOs&feature=emb_logo (Lawrence Livermore National Laboratory)
- https://www.youtube.com/watch?v=aQv9p6rCLDw (War Studies KCL)
- https://www.cornell.edu/video/panel-preparing-intelligently-for-bioterrorism (Woodrow Wilson International Center for Scholars)

In SINS22, ISTAS22, 2022, person, securitization
Tags Kathleen Vogel, ASU, securitization of the person, human security, human trafficking, anti-trafficking, emergencies, counter-trafficking, critical collaboration, global emancipation network, fragmentation, duplication, responsible AI, challenges

Discovery, Modeling and Interdiction of Human Trafficking Networks

Speakers
Dominique Roe-Sepowitz, Arizona State University, USA
Jorge Sefair, University of Florida, USA
Tony Grubesic, University of California - Riverside, USA
Arunabha Sen, Arizona State University, USA

Abstract

In this talk, we discuss a holistic approach to the discovery, modeling, and interdiction of human trafficking networks. The trafficking of humans and illicit drugs are pervasive problems in the United States with an immeasurable negative impact. Unfortunately, the business of selling illicit drugs and forced sex is growing, almost quadrupling its transaction volume over the last decade. Law enforcement agencies and advocacy groups face enormous challenges when attempting to disrupt these activities because of the adaptability of both the market and traffickers. We present the preliminary results of our transdisciplinary approach that integrates academia with domain experts, and law enforcement agencies to deepen our understanding of sex trafficking networks, detect their patterns, and develop tools for their disruption. We focus on our findings at the intersection of field work with detectives and survivors, and expertise from social sciences, operations research, computer science, and information science. We also discuss some of the advantages and challenges of conducting transdisciplinary research.

Biographical Notes

Dominique Roe-Sepowitz is an associate professor in the School of Social Work at Arizona State University and she is the director of the ASU Office of Sex Trafficking Intervention Research. Roe-Sepowitz has her master's degree and doctorate in social work and is a researcher, professor and a forensic social work practitioner. Dominique teaches in the clinical track of the Masters of Social Work program as well as provides clinical intervention groups focused on abuse and trauma in the community to women and men exiting prostitution. Dominique's research focus is on women and violence with a focus on prostitution and the therapeutic needs for exiting. Her expertise includes sex trafficker profiles, establishing a prevalence of sex buyers, and sex trafficking victim prevention and intervention design. Dominique works very closely with community groups including the Phoenix Police Department, the Phoenix Prosecutor's Office and Catholic Charities DIGNITY programs. Her research work spans the prevention, detection, identification and trauma-focused treatment of sex trafficking victims. Recent projects include estimations of online sex buying demand, estimating the prevalence of sex trafficking victims within the juvenile delinquency and adult probation systems in Arizona, surveying Arizona's homeless young adults about their sex trafficking experiences (Youth Experiences Survey), studying patterns within arrest cases of traffickers, exploring sex ads and demand response around the Super Bowl in 2014 and 2015, and evaluating interventions for sex trafficking victims. Community partnerships for developing new knowledge about sex trafficking include the Las Vegas Metropolitan Police Department, the Phoenix Police Department, and the Tucson Police Departments. Dominique has conducted research with partners including Thorn: Digital Defenders of Children, Shared Hope International, and Demand Abolition. Community interventions that Dominique has helped to develop includes Project ROSE, the Phoenix 1st Step Drop-in Center, and projectstarfish.education. Dominique also co-created an eleven week psychoeducation group provided at ten locations around Arizona entitled Sex Trafficking Awareness and Recovery.

Jorge A. Sefair is an Associate Professor of Industrial and Systems Engineering at the University of Florida. His research interests include network optimization, multistage optimization, and integer programming. His research has been interdisciplinary, having published academic works with colleagues from a variety of fields, including civil engineering, public health, ecology, biology, and economics.

Tony Grubesic is a professor in the School of Public Policy at the University of California at Riverside, where he also serves as the Director of the Center for Geospatial Sciences. Grubesic is an FAA certified commercial drone pilot.

Arunabha Sen is a professor who joined ASU in 1987. Sen's teaching focuses on networks and algorithms. His research looks at resource optimization problems in telecommunication networks. He also works on physical design of VLSI circuits, hardware-software co-design and network security. His research interests include resource optimization in optical, wireless and sensor networks, video transmission over mobile ad-hoc networks, network processors, system/network on chip design, combinatorial optimization, algorithm design and analysis.

Keywords
human trafficking, sex trafficking networks, sex trafficking interdiction

Related Works

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- Clarke, R.J., Clarke, E.A., Roe-Sepowitz, D. and Fey, R., 2012. Age at entry into prostitution: Relationship to drug use, race, suicide, education level, childhood abuse, and family experiences. Journal of Human Behavior in the Social Environment, 22(3), pp.270-289.

Select Videos

- https://www.youtube.com/watch?v=OmlKQgo9R78 (TEDx)
- https://www.pbs.org/video/05-28-19-dyv3pt/ (PBS: Arizona Horizon)

Citation: Dominique Roe-Sepowitz, Jorge Sefair, Tony Grubesic and Arunabha Sen, 11 November 2022, "Discovery, Modeling and Interdiction of Human Trafficking Networks" in Kathleen Vogel et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, person
Tags human trafficking, sex trafficking networks, sex trafficking interdiction, discovery, modelling

COVID-19 and Emergencies as Determinants of Anti-Trafficking Efforts

Speakers
Jean-Pierre Gauci, British Institute of International and Comparative Law, UK
Noemi Maguglianin, British Institute of International and Comparative Law, UK

Abstract
This paper examines the role of crises (and the COVID-19 crisis in particular) in shaping governments' anti-trafficking efforts. Research has shown that in emergency situations individuals are at greater risk of being trafficked. Our paper examines a different, albeit related, question and focusses on the impacts of crises on governments' anti-trafficking efforts. While the link between emergency situations and risks of trafficking has been established, little exists in the literature as to the impact of emergency situations on a State's anti-trafficking response.

According to the findings of a two-year comparative research project on 'Determinants of Anti-Trafficking Efforts', it is often the case that crises hinder, rather than improve, anti-trafficking efforts. Whilst the impact of COVID-19 was less linear, the outcome remains. The lack of attention, resources and capacity in times of emergencies is interlinked with States' governance and political situation, and breakdowns in the rule of law. 'Protection gaps' are heightened by the diversion of (political) attention and funding that may have been allocated to anti-trafficking towards the emergency situation. Indeed, as anti-trafficking efforts 'are not necessarily understood as immediately life-saving in an emergency situation' (Tillinac 2015), governments tend not to prioritise anti-trafficking efforts as an issue requiring an immediate response in an emergency context. The broader anti-trafficking frameworks do not seem

Our paper argues that crises, like other determinants, must be seen within the broader network of factors influencing anti-trafficking policies and that frameworks must speak to each other in ensuring that anti-trafficking efforts are 'protected' during emergency responses.

Keywords
human trafficking, COVID, crisis, determinants

Biographical Notes
Dr. Jean-Pierre Gauci is Senior Research Fellow in Public International Law and Director of Teaching and Training at BIICL. Recruited in 2014 as a research coordinator for the British

Influences on International Law Project, his role was extended to that of research fellow in August 2015 and associate senior research fellow in 2017. Jean-Pierre holds a PhD in Law from King's College London with research that focused on trafficking based asylum claims. He also holds a Doctor of Laws and Magister Juris in International Law from the University of Malta. Beyond his work at the institute, Jean-Pierre is also a director of The People for Change Foundation, a human rights think tank based in Malta. He lectures International Migration law and Ocean governance at the University of Malta. He has experience of research, lobbying and proactive action in the fields of migration and asylum law, human trafficking and anti-discrimination as well as teaching experience in various international and domestic legal issues. He consults widely to national and international governmental and non-governmental organizations. His primary research areas include international migration and refugee law.

Dr. Noemi Magugliani is a Research Fellow in Anti-trafficking Law and Policy at BIICL. Noemi holds a PhD in Law from the National University of Ireland Galway, where they conducted research that focussed on trafficked adult men, gendered constructions of vulnerability, and access to protection. Noemi also holds an LLM in International Human Rights Law and Policy from University College Cork and a BA in International Relations from the University of Milan. Beyond their work at the institute, Noemi is also a Legal Advisor to the United Nations Special Rapporteur on Trafficking in Persons, Professor Siobhán Mullally, and a Legal Researcher with the Global Legal Action Network (GLAN). Noemi has also collaborated with the Secretariat of the Council of Europe's Group of Experts on Action against Trafficking in Human Beings, focussing on trafficking for the purpose of labour exploitation, and with the International Organisation for Migration (IOM), where they worked in the framework of the Displacement Tracking Matrix (DTM) project. Noemi has experience of research in the fields of migration, asylum law, and human trafficking, as well as teaching experience in the fields of human rights, migration law, and refugee law.

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- Gauci, J-P., Magugliani, N. https://www.biicl.org/blog/28/judicial-quasi-judicial-and-specialised-non-judicial-bodies-as-determinants-of-anti-trafficking-efforts

Select Videos
- https://www.youtube.com/watch?v=ladTnTcVlzI (Actions Podcast)
- https://www.youtube.com/watch?v=O37NgzWySk8&t=1408s (Externalization of Borders)
- https://www.youtube.com/watch?v=Q-xrMxyp9Vc (BIICL)

Citation: Jean-Pierre Gauci and Noemi Maguglianin, 11 November 2022, "COVID-19 and Emergencies as Determinants of Anti-Trafficking Efforts" in Kathleen Vogel et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, person
Tags human trafficking, COVID, crisis, determinants, emergencies

Critical Collaboration: Combating Fragmentation and Duplication in Counter-Trafficking

Speaker
Sherrie Caltagirone, Global Emancipation Network, USA

Abstract
Global Emancipation Network is a nonprofit dedicated to ending all forms of human trafficking across the globe through data and technology. As human trafficking and modern slavery are the fastest growing and second most profitable crime around the world, now more than ever we must collaborate to share data securely and rapidly create and evolve tools to outwit nefarious organizations and rescue victims.

Keywords
human trafficking, data, technology, modern slavery, exploitation, CSAM, human rights, nonprofits

Biographical Note

Sherrie Caltagirone is the founder and executive director of Global Emancipation Network (GEN), a leading data analytics and intelligence nonprofit dedicated to countering human trafficking. She also serves as the technical lead for the Trafficking Investigations Hub at California State Polytechnic University's California Cybersecurity Institute. She brings over 17 years of counter-trafficking experience with significant experience in international partnerships, legislation, and tool development. Sherrie served as a distinguished research scholar at North Carolina State University and was named the SANS Institute's 2020 Difference Maker.

Caltagirone is driven by research on the use of data analytics and mathematical models to combat trafficking, measuring criminal economies, and poly-criminality. Caltagirone recently launched a new podcast, "Finding Freedom: Human Trafficking and Modern Slavery" to foster collaboration, share successes and challenges in the field, and drive innovation. She received her degree in international relations summa cum laude from American University.

Related Links
- https://independent.academia.edu/SherrieCaltagirone
- www.globalemancipation.ngo

Select Videos
- https://www.youtube.com/watch?v=y7vgVYrc86c (Splunk / theCube)
- https://www.youtube.com/watch?v=I51ilsLZWYE (Devin Thorpe Show / Forbes)
- https://www.youtube.com/watch?v=JeWSliMr22I (SANS Institute)

Citation: Sherrie Caltagirone, 11 November 2022, "Critical Collaboration: Combating Fragmentation and Duplication in Counter-Trafficking" in Kathleen Vogel et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, person
Tags human trafficking, data, technology, modern slavery, exploitation, CSAM, human rights, non-profits, NFP, stakeholder

Responsible AI for Addressing Human Security Challenges

Speaker
Anjali Mazumder, The Alan Turing Institute, UK

Abstract
The rise of big data and AI – the Fourth Industrial revolution – provides opportunity to tackle some of the greatest humanitarian challenges. Approximately 100 million people are currently displaced (2022) in the world due to war, violence, and human rights abuses – 1.25% of humanity. Under one billion people do not have a legal identity, limiting access to health and economic security. Over 40 million people were in modern day slavery (2016). Several countries with the highest estimates are those riddled with conflict and suffering from a lack of security and breakdown in Rule of Law, resulting in displacement and high risk of exploitation. Climate change and lack of economic opportunity increase these outcomes. This causes both national and international risk, particularly as people are bought and sold and moved across

land and waters (often without papers/documentation). New technologies, rising smartphone ownership and cheap, fast internet use has taken slavery into modern digital age, facilitating modern day enslavers to entrap more victims through enticement, expand their illicit organisations and hide behind screens. New technologies such as remote sensors and machine learning methods yield "tech" solutions to enable law enforcement and intelligence agencies to engage with researchers to disrupt recruitment and enslavement, with potential to shift the risk from victims to enslavers and traffickers. For "tech" responses to be effective requires stakeholder engagement including survivors. In this talk, we share our multi-disciplinary socio-technical approach to actualise the benefits of AI whilst balancing the risks and harms to safeguard human and border security.

Keywords
AI, machine learning, human security, responsible innovation, human rights, privacy

Biographical Note
Anjali Mazumder is the Theme Lead on AI and Justice & Human Rights. Her work focuses on empowering government and non-profit organisations by co-designing and developing responsible and inclusive data and AI methods, tools and frameworks for safeguarding people from harm – particularly those most vulnerable, building resilient institutions and systems, and accelerating the opportunity for inclusive, fair and just services, systems, economies, and communities. She is passionate about fostering multi-disciplinary collaborations and multi-sector partnerships to co-create pathways for innovation that improves services, policy, and actions to safeguard human rights and address humanitarian challenges. Her research interests are in developing integrated Bayesian decision support systems to manage uncertainty with complex data structures, value of evidence, causal reasoning in the wild; expert judgement; detecting bias and algorithmic fairness; socio-technical solutions to harnessing multiple disparate sources of data whilst enabling responsible and inclusive data and AI principles and practices; communicating uncertainty and risk; and safeguarding rights and the Rule of Law.

She has over 15 years' experience tackling fundamental statistical problems of societal importance – human rights, justice, security, the Law, education, public health & safety – working at the interface of research, policy and practice in the UK, the US, and Canada, fostering multi-disciplinary and cross-sector collaborations. She was appointed to Canada's National DNA Databank Advisory Committee (2012-2018) and currently serves on the UK Forensic Science Regulator's fingerprint interpretation subgroup, and the senior management board of the UK's Policy and Evidence Centre for Modern Slavery and Human Rights. She has also served the Royal Statistical Society in a variety of ways, most recently appointed to the Statistics & Law Section and the Data Science Section committees. She holds a doctorate in Statistics from the University of Oxford and two masters' degrees in Measurement and Evaluation, and Statistics from the University of Toronto.

Related Works
- https://www.turing.ac.uk/people/researchers/anjali-mazumder
- https://www.turing.ac.uk/ai-human-rights
- https://cpr.unu.edu/events/archive/event/ai-for-good-global-summit-ai-to-prevent-modern-slavery-and-child-trafficking.html

Select Videos
- https://www.youtube.com/watch?v=4bOT78okaNA (AI for Good Webinars)
- https://www.youtube.com/watch?v=kciz6VuIpL4 (Turing)
- https://www.youtube.com/watch?v=EOKH3sf0xU (AI in the Age of COVID)

Citation: Anjali Mazumder, 11 November 2022, "Responsible AI for Addressing Human Security Challenges" in Kathleen Vogel et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, person
Tags AI, machine learning, human security, responsible innovation, human rights, privacy

Securitization of Place

Moderator
Jeremy Pitt, Imperial College London, UK

Abstract
In the past, national security was primarily concerned with military capability to secure physical resources and boundaries from external threats. Following the end of the Cold War and the "Information Revolution" creating the "Knowledge Economy", these threats have diminished; anyone invading Silicon Valley, it is said, won't find much silicon there. However, while previous generations of Americans and European made remarkable sacrifices to protect nation states, their citizens and democratic governance from powerful and existential external threats, the current generation faces a different type of threats: the threat to resources is less expropriation from an external threat but depletion by an internal competition; the threat to boundaries is not so much the nation state, but to personhood, civil rights and community belonging. Most of all, these threats are arguably and increasingly insider threats: threats from institutions and organisations with whom we have actually established a trust relationship: now BigTech wants its share of attention; BigFood wants its share of "stomach", BigPharma wants its share of wellness concern, etc. Therefore, the current generation faces a different task: how to protect themselves and their communities from "dying from within". And this is the focus of the "securitisation of place" session: how our lived environment can be made sustainable, self-sufficient, and supportive for human flourishing.

Biographical Note
Jeremy V. Pitt is Professor of Intelligent and Self-Organising Systems in the Department of Electrical and Electronic Engineering at Imperial College London. He received a B.Sc. in Computer Science from the University of Manchester and a Ph.D. in Computing from Imperial College (University of London). He has been teaching and researching Artificial Intelligence and Human-Computer Interaction for over thirty years, where his research programme has used computational logic to specify algorithmic models of social processes, with applications in cyber-physical and socio-technical systems, especially for sustainable, fair and legitimate self-governance. He has collaborated on research projects extensively in Europe, but also in India and New Zealand, and has held visiting professorial positions in Italy, Japan and Poland. He has published more than 200 articles in journals, conferences and workshops, and this work has received several Best Paper awards. He is a trustee of AITT (the Association for Information Technology Trust), a Fellow of the BCS (British Computer Society) and of the IET (Institution of Engineering and Technology), and in 2018 was appointed as Editor-in-Chief of IEEE Technology & Society Magazine.

Related Works
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Related Videos
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- https://www.youtube.com/watch?v=yudqGuElgVA (PIT Colloquium 21)
- https://www.youtube.com/watch?v=knOaxDv_8gk (AAG 22)
- https://www.youtube.com/watch?v=1MeIvYCc4Ck (Imperial Tech Foresight 21)

- https://www.youtube.com/watch?v=6eyxp8Pt5sg (Bitcoin Wednesday 21)
- https://www.youtube.com/watch?v=dCBvkzUmUQs (Digital Futures 21)
- https://vimeo.com/50762973 (The Awareness Initiative 12)

Ensuring Food Security through Menu Optimization - OPTIMEAL

Speakers
Liselotte Schäfer Elinder, Karolinska Institutet, Sweden
Patricia Eustachio Colombo, Karolinska Institutet, Sweden

Abstract
Humanity is facing immense challenges regarding food security for a growing world population. Current dietary patterns in high- and middle-income countries are leading to increasing rates of obesity and other chronic diseases, while hunger is rising in some low-income countries. Moreover, food production systems are transgressing at least six planetary boundaries namely greenhouse gas emissions, land and water use, nitrogen and phosphorus eutrophication and loss of biodiversity. This cannot continue any longer, and the UN's warnings are now on red alert. Today, research has shown that a healthy, sustainable and realistic dietary pattern is mainly plant-based with a maximum of 10-20% of the levels of animal products consumed today. The question is how to adapt and gain acceptance in the population for this new diet both at the supply and the demand side. One promising channel to facilitate relatively rapid change is through public meals served daily in great numbers in a variety of settings such as schools, workplaces, hospitals and care homes. The goal of the OPTIMEAL project is to make a technological leap to a fully automated design of menus considering nutritional adequacy, environmental impact, and similarity to the current diet regarding taste and cost, using artificial intelligence. Together with users, a database of popular mainly plant-based recipes will be created from which an optimized menu can be designed for repeated periods of 1-2 months, tailored to specific needs and wishes of the target group. In combination with education and other measures this could lead to a growing acceptance of a new type of diet ensuring global food security and environmental sustainability.

Keywords
food production system, public health, planetary boundaries, environmental sustainability, public meals, optimization, co-creation

Biographical Notes

Liselotte Schäfer Elinder is Adjunct professor of Public Health Sciences at the Department of Global Public Health and group leader of the Community nutrition and physical activity research group. I am also employed at the Centre for Epidemiology and Community Medicine,

Region Stockholm, where I work with health promotion and disease prevention. After taking my PhD in medical biochemistry in Denmark in 1990, I joined Karolinska Institutet as a postdoc researcher in the area of atherosclerosis and cardiovascular diseases. In 1998, I joined the Swedish National Institute for Public Health as head of the Unit for Diet and Physical Activity. I was engaged in the development of the Swedish Public Health Policy adopted in 2003. In 2006, I joined the Centre for Public Health, Stockholm County Council as head of the Unit for Applied Nutrition. In 2009, I returned to Karolinska Institutet as vice head for the Division of Intervention and Implementation Research, Department of Public Health Sciences. In 2013, I became adjunct senior lecturer in intervention and implementation research at the Department for Public Health Sciences, and in 2017 I became adjunct professor in Public Health Sciences.

Patricia Eustachio Colombo is an affiliated researcher at the Department of Global Public Health, Karolinska Institutet. Her past and current research revolves around exploring relationships between food systems, the environment and health mainly through optimization analyses and intervention research. As a visiting Research Fellow at the London School of Hygiene and Tropical Medicine she conducts research which includes the development of agent-based models and health impact assessments to quantify the health and environmental impacts from shifts towards plant-based diets on a population level.

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- Norman Å, Bohman B, Nyberg G, Schäfer Elinder L, Health education & behavior : the official publication of the Society for Public Health Education 2018;45(1):132-140

Select Videos
- https://www.youtube.com/watch?v=sJGftOutaTs (Meet Liselotte Schäfer Elinder)
- https://m.facebook.com/karolinskainstitutet/videos/hur-f%C3%A5r-vi-sundare-skolbarn/377268877218566/?locale=et_EE&__so__=permalink&__rv__=related_videos (Hur får vi sundare skolbarn?)
- https://www.youtube.com/watch?v=Ur2yr7hFQdI (Conf on School Meals)
- https://www.youtube.com/watch?v=31oSgRODAGI (Agenda 2030)
- https://www.youtube.com/watch?v=Z5-747EGcCY (Sustainable School Meals)

Citation: Liselotte Schäfer Elinder and Patricia Eustachio Colombo, 11 November 2022, "Ensuring food security through menu optimization - OPTIMEAL" in Jeremy Pitt et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th

Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, place, person, SINS22

Tags food security, menu optimization, OPTIMEAL, challenges, world population, dietary patterns, obesity, chronic disease, planetary boundaries, greenhouse gas emissions, land and water use, nitrogen and phosphorus eutrophication, loss of biodiversity, supply, demand, automated design, menus, education, environmental sustainability, public health, food production system, public meals, co-creation, optimization

Counteracting the Global Labor Shortage Risk through the Human-AI Collaboration in Digital Recruiting

Speaker
Olena Linnyk, milch & zucker AG / Justus Liebig University of Giessen,/ Frankfurt Institute for Advanced Studies, Germany

Abstract
Today's generation faced blows to its security in the areas of health, military, and environment. However, another major crisis is yet to come: the crisis of human capital. Demographic change is among the clearest megatrends threatening the global economy and society demanding a truly global perspective. By 2030, most countries will face labor shortages and there will be significant labor imbalances worldwide. For instance, the World Health Organization reported the expected shortage of over 10 million health workers in 2030. In Germany, the talent deficit is already at hand, seeing a shortage of 2.4 million workers. It is projected that the world GDP will fall by $10 trillion, because the nations will not be able to fill existing jobs or create enough jobs for the available workforce.

Clearly there is no one immediate mitigating solution, instead, several actions must be taken: (1) boosting productivity and effectivity through innovation, (2) enabling long-distance virtual collaboration, (3) optimizing the effectiveness of the entire recruiting processes, (4) increasing the labor participation rate of women and other under-represented group. For instance, it is becoming increasingly important that job postings are formulated in such a way that they have the greatest possible impact, and no group of suitable applicants feels excluded.

Big data and AI provide an opportunity to tackle these tasks. Prominent applications include programmatic advertising for optimized impact of job ads and timely bringing together job offers and suitable applicants. Another is supporting the effective communication with applicants through AI-based chatbot systems. Finally, augmented writing AI-components suggest better wording of Job-Ads that is also gender-neutral.

We emphasize potential new risks that this technology brings. The expectations of rationality and neutrality are not necessarily fulfilled by AI decision systems trained on historical data of human decisions. For instance, the targeted playout of job ads harbors inherent risk of discrimination and bias. The transparency and fairness of algorithms must be ensured. Nevertheless, AI-powered digital recruiting technology could be the necessary ingredient to overcome the imminent risk of the global workforce crisis.

Keywords
AI, digital recruiting, labor shortage, HR, HRM, gender, fairness, job postings, ATS, bias, skills

Biographical Notes
Physicist, book author and AI specialist Dr. Olena Linnyk is responsible for the development of AI solutions in the digital HR division of milch & zucker AG. She is also a private lecturer at the University of Giessen and a researcher at the Frankfurt Institute for Advanced Studies (FIAS).

Related Works
- https://dl.acm.org/doi/10.1145/3378539.3393862

- https://www.springerprofessional.de/ki-im-recruiting-anwendungsfelder-entwicklungsstand-und-anwendun/18826912

Select Videos
- https://www.youtube.com/watch?v=IUpiWUD41eQ (GPU Day)
- https://www.youtube.com/watch?v=4catqPaB8Pw (Very Deep Learning)
- https://www.youtube.com/watch?v=dCzuNs9jen4 (Milch and Zucker)
- https://www.youtube.com/watch?v=gm10dAYdKYo (GPU vs CPU)

Citation: Olena Linnyk, 11 November 2022, "Counteracting the Global Labor Shortage Risk through the Human-AI Collaboration in Digital Recruiting" in Jeremy Pitt et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In SINS22, securitization, place
Tags AI, digital recruiting, labor shortage, HR, HRM, human resources management, gender, fairness, job postings, ATS, bias, skills

Sustainable Smart Cities: Testbed Infrastructure and Human Behaviour
*Note: this talk will not be recorded.

Speakers
V. Cvetkovic, KTH Royal Institute of Technology, Stockholm, Sweden
A. Fontan, KTH Royal Institute of Technology, Stockholm, Sweden
M. Molinari, KTH Royal Institute of Technology, Stockholm, Sweden
K.H. Johansson, KTH Royal Institute of Technology, Stockholm, Sweden
P. Herman, KTH Royal Institute of Technology, Stockholm, Sweden
M. Skoglund, KTH Royal Institute of Technology, Stockholm, Sweden
H. Kjellström, KTH Royal Institute of Technology, Stockholm, Sweden
C. Katzeff, KTH Royal Institute of Technology, Stockholm, Sweden

Abstract
Development and use of infrastructure in smart cities implies some level of integration between
physical (natural and technical), cyber (data and computations) and human-social systems.
Although this integration is challenging in many aspects, the least understood component is the
humansocial system in particular human decisions and choices. We outline a recently initiated
project with a residential building as a testbed to demonstrate physical, cyber and human
system coupling, specifically designed to address how human behaviour and lifestyle choices
affect energy and resource use. The addressed issues range from security to individual choices
and in particular effects of social interactions.

Biographical Notes
Vlad Cvetkovic is full professor in water resources engineering at KTH Royal Institute of
Technology, Stockholm, Sweden, since 1996. Most of his research has been focused on water
resources issues involving theoretical and experimental studies. More recently, his research has
shifted toward urban system analysis with special interest in developing interdisciplinary
research toward sustainability.

Keywords
development, use, infrastructure, smart cities, integration, physical systems, cyber systems,
human-social systems, human decisions, choices, residential building, testbed, coupling, human
behavior, lifestyle, choices, energy, resource use, security, individual, effects, social
interactions

Related Works
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Select Links
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- https://www.digitalfutures.kth.se/about/facts-figures/ (Digital Futures)

Citations: V. Cvetkovic, A. Fontan, M. Molinari, K.H. Johansson, P. Herman, M. Skoglund, H. Kjellström and C. Katzeff, 11 November 2022, "Sustainable Smart Cities: Testbed Infrastructure and Human Behaviour" in Jeremy Pitt et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

Reimagining Digital Public Spaces and Artificial Intelligence for Deep Cooperation

Speaker
Peter Lewis, Ontario Tech University, Canada

Abstract
Space has always been a key resource in the organization and self-organization of communities, which in turn is required for collective action, the solving of public action problems, and the strengthening and empowerment of diverse groups. That the spaces aligned with a group's sense of place are securely and purposefully held, such that the right the group to autonomously self-organize is assured, is a pre-requisite.

While it is common to consider the power of digital spaces to build community, today's most widely used tools are more like shopping malls than community centres: you may choose to meet your friends there, but ultimately their purpose is otherwise, and their ownership is private. This both limits them and introduces risks to self-organization.

Many online spaces have also become 'smart', where increasingly 'AI' is pervasive and exerts influence over what happens in the space in ways that are difficult to understand and may be contra the group's interest.

In this talk I shall argue that rather than support community action, the digital transformation of place is threatening the existence of essential public spaces. Further, the confluence of this and pervasive AI acts to individualize and dehumanize rather than collectivize and empower, since the 'intelligence' of AI as commonly imagined reflects little of that most valuable of form of human intelligence, the ability to engage in collective action with others.

As a result, we have become used to being 'on the back foot' in multiple ways when it comes to responding to AI and the digital transformation. This talk is an attempt to imagine an alternative smart, secure concept of place for digital public spaces, based around the notions of decentralization and deep cooperation. Using a case study from an ongoing project with a community of inner-city nurses, I will sketch how such smart spaces could be constructed in a network in a way that builds collective awareness and empowerment, facilitates deeper cooperation, and uses technology to enable social action.

Biographical Notes
Dr. Peter Lewis holds a Canada Research Chair in 'Trustworthy Artificial Intelligence', at Ontario Tech University, where he is an Associate Professor in the Faculty of Business and Information Technology. He has a PhD from the University of Birmingham, in the UK. He holds leadership roles in various international research communities, including being Associate Editor of IEEE Technology & Society Magazine. Dr. Lewis's research advances both foundational and applied aspects of trustworthy, reflective, and socially intelligent systems. Drawing on extensive experience applying AI, particularly with small and medium enterprises and in the non-profit sector, he is interested in where AI meets society, and how to help that relationship work well. His research is concerned with how to conceive of and build AI systems that meet this challenge.

Keywords
reimagining, digital public spaces, AI, cooperation

Related Works
- Peter's blog: https://www.petelewis.com/
- Peter R. Lewis, Stephen Marsh, and Jeremy Pitt. AI or "AI": Synthetic minds or speech acts. IEEE Technology and Society Magazine, 40:6–13, 2021. Available at: https://ieeexplore.ieee.org/document/9445758
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Citation: Peter Lewis, 11 November 2022, "Reimagining Digital Public Spaces and Artificial Intelligence for Deep Cooperation" in Jeremy Pitt et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, place, SINS22
Tags reimagining, digital public spaces, AI, cooperation

Respecting and Protecting Cultural Values in an Indigenous Virtual Reality Project
*Note: This talk will not be recorded.

Speakers
Holger Regenbrecht, Unviersity of Otago, New Zealand
Steven Mills, Unviersity of Otago, New Zealand

Abstract
In this talk we present findings from a project on the co-design and development of a virtual-reality-based storytelling and tele-co-presence project for and with Māori people from Aotearoa New Zealand. Over the last four years, and with a number of iterations we created a virtual environment in which indigenous stories can be told in a culturally appropriate context to re-connect diasporic Māori communities back to their cultural roots. Our project aims for embodied tele-co-presence in that storytelling environment, i.e. for the experience of virtually "being there together" in a real-time interactive, three-dimensional way.

Our co-design approach is based on the Tiriti o (Treaty of) Waitangi principles of partnership, participation, and protection. We reflect on our experiences in implementing those three principles with a special emphasis on cultural protection. Protection means actively protecting Māori knowledge, interests, values, and cultural and spiritual treasures (tāonga). From our non-Māori (aka pākeha) point of view we will highlight how we are developing a basic understanding of the underlying value system, how we managed to respect values and protocols (tikanga) appropriately, and how we put in mechanisms to pro-actively protect cultural and spiritual values and practice.

We believe that our approach and experiences can inform other researchers and practitioners in respecting and protecting cultural values in information-technology-based projects.

Biographical Notes
Holger Regenbrecht is a Professor with the Department of Information Science, University of Otago, Ōtepoti Dunedin, Aotearoa New Zealand, working in human-computer interaction. He has been working in the fields of virtual and augmented reality in academic and non-academic roles for 25 years. He was initiator and manager of the Virtual Reality Laboratory at Bauhaus University Weimar (Germany) and the Mixed Reality Laboratory at DaimlerChrysler Research and Technology (Ulm, Germany). He co-leads the Human-Computer Interaction Lab at the University of Otago. His research interests include (collaborative) augmented reality, 3D teleconferencing, psychological, cultural, and ethical aspects of mixed reality, three-dimensional user interfaces, and computer-aided therapy and rehabilitation. He is a member of several international professional groups and serves as a reviewer and auditor for a number of conferences, journals, and institutions. Further information about his research can be found at www.igroup.org/regenbre/publications.html and www.hci.otago.ac.nz.

Steven Mills received his BSc (Hons) and PhD in Computer Science from the University of Otago, and completed his studies 2000. After working for a short time in Christchurch as a software developer he took up a lectureship at The University of Nottingham. In 2006 he returned to New Zealand and worked in commercial research and development at the Geospatial Research Centre and then Areograph Ltd before returning to the Computer Science Department as a lecturer in 2011. His research interests are in computer vision, and particularly in the reconstruction of 3D scenes from multiple views. While there are a number of outstanding issues, recent advances mean that a wide range of scenes can be reconstructed from images alone. Applications of this technology include terrain modelling from aerial imagery, construction of architectural models, and generation of realistic environments for games and entertainment. I am also interested in related fields such as motion analysis, stereo vision, and image based rendering, as well as applications of computer vision and image processing to the analysis of scientific imagery.

Related Works
- H. Regenbrecht et al., "Ātea Presence— Enabling Virtual Storytelling, Presence, and Tele-Co-Presence in an Indigenous Setting," in IEEE Technology and Society Magazine, vol. 41, no. 1, pp. 32-42, March 2022, doi: 10.1109/MTS.2022.3147525. https://ieeexplore.ieee.org/abstract/document/9731831
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Selected Videos
- https://www.youtube.com/watch?v=VQb4rKb_tL4 (ARIVE Lecture 13)
- https://www.youtube.com/watch?v=n-hLI_bOYGY (ARIVE Lecture 11)
- https://www.youtube.com/watch?v=hlEtTcQ6pOs (ARIVE Lecture 7)
- https://www.youtube.com/watch?v=KNrJJNZ3Aso (ARIVE Lecture 1)
- https://www.youtube.com/watch?v=Tc3YPbPVWDE (Otago University)
- https://www.youtube.com/watch?v=tJw9WRRzwNM (IEEE VR2019)

Citation: Holger Regenbrecht, 11 November 2022, "TBA" in Jeremy Pitt et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, place, SINS22
Tags virtual reality, human-computer interaction, mixed reality, collaborative, augmented reality, 3D, teleconferencing, psychological, cultural, ethical, 3D user interfaces, computer-aided therapy, rehabilitation

energy security

Speaker
Stephen McArthur, University of Strathclyde, Scotland

Abstract
* Pending

Keywords

Biographical Note

Stephen McArthur is Associate Principal and Executive Dean of Engineering at the University of Strathclyde. He also holds the position of Distinguished Professor of Intelligent Energy Systems. His main area of expertise is applying artificial intelligence in power and energy systems. He has delivered solutions for a range of smart grid, asset management and data analytic challenges. His research now concerns the customisation of artificial intelligence techniques combined with distributed intelligence architectures to provide decision support for energy and wider industrial applications. He leads the Industrial Informatics Cluster within the University.

Professor McArthur won the 2021 IEEE Richard Harold Kaufmann Award for outstanding contributions in industrial systems engineering, "for innovative contributions to the advancement of intelligent systems for power engineering applications".

He is the Principal Investigator leading the UKRI EnergyREV programme. This brings together 22 universities and 32 investigators to deliver novel research and innovation that will accelerate the uptake, value and impact of Smart Local Energy Systems. EnergyREV is a key component of the UK Industrial Strategy Challenge Fund's Prospering from the Energy Revolution (PFER) programme. PFER intends to prove investable, scalable local business models using integrated approaches to deliver cleaner, cheaper energy services.

In addition, he is the Director of the joint Strathclyde and Imperial College EPSRC Centre for Doctoral Training in Future Power Networks and Smart Grids. This aims to train doctoral level engineers who can realise the future low carbon smart grid. Professor McArthur is also Academic Director of the Advanced Nuclear Research Centre at Strathclyde, which delivers academic and industry collaborative programmes focused on plant lifetime extension and improved operations in the nuclear industry.

As co-founder and Chief Technology Officer of Bellrock Technology, he has helped design and create the Lumen product. This supports the effective and rapid deployment of intelligent system and data analytic products and services, and is being used by customers across eight different industry sectors including energy, healthcare and rail transport.

Related Works
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Citation: Stephen McArthur, 11 November 2022, "TBA" in Jeremy Pitt et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, place, SINS22
Tags AI, artificial intelligence, power, energy systems, smart grid, asset management, data analytic challenges, decision support, energy, industrial informatics

Securitization through Transdisciplinarity

Moderators
Roba Abbas, University of Wollongong, Australia
Mariana Zafeirakopoulos, University of Technology, Sydney, Australia

Session Abstract
Attempting to address complex societal challenges requires the application of transdisciplinary approaches that incorporate and integrate a variety of disciplines and stakeholders to develop solutions or responses to these challenges that transcend disciplinary boundaries. This session will employ a socio-technical perspective in exploring "Securitization through Transdisciplinarity", covering themes such as vulnerability, infrastructure, internet access, necessity, ethical use, ways of knowing, secure futures, threats and risks, and cyber biosecurity, among others.

Biographical Notes

Roba Abbas is a Senior Lecturer (Operations and Systems) and Academic Program Director with the Faculty of Business and Law at the University of Wollongong, Australia, and more recently a visiting Professor with the School for the Future of Innovation in Society at Arizona State University, USA. She is also a Co-Editor of the IEEE Transactions on Technology and Society, former Associate Editor of the IEEE Technology and Society Magazine, and Technical Committee Chair of the Socio-Technical Systems Committee of the IEEE. Roba has a PhD in location-based services regulation, and industry experience in web design and development. She has received competitive grants for research addressing global challenges in areas related to co-design and socio-technical systems, operations management, robotics, social media and other emerging technologies. Roba primarily researches methodological approaches to complex socio-technical systems design, emphasising transdisciplinarity, co-design and the intersection of society, technology, ethics, and regulation.

Mariana Zafeirakopoulos is a former federal law enforcement public servant, Mariana made the move to private industry to explore transdisciplinary and participatory co-design practice in strategic, emergent and complex contexts. Mariana is undertaking a PhD exploring knowledge co-production to create more desirable futures in national security contexts. She aims to create new law enforcement intelligence practices that better grapple with emerging, evolving and complex problems like cybersecurity, terrorism and community cohesion. Mariana is also an Adjunct Lecturer in Strategic Intelligence at Charles Sturt University; a Social and Strategic Designer and researcher and currently is an Academic Coordinator at the University of Sydney. Mariana is particularly passionate about designing for the future and using playful and game-based approaches to explore alternate futures with diverse stakeholder groups.

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In securitization, SINS22, transdisciplinarity
Tags transdisciplinarity, methodological approach, innovation, design, critical thinking, socio-technical, IEEE SSIT, vulnerability, threats, risks, infrastructure, security, necessity, luxury, online access, Internet, AI, artificial intelligence, ethical use, ways of knowing, secure futures, cyber biosecurity, mitigation, challenges, opportuntieis, opportunities

IEEE SSIT Open Discussion on the Socio-Technical Lens and Transdisciplinarity

Speakers
Roba Abbas, University of Wollongong, Australia
Katina Michael, Arizona State University, USA

Abstract
The Institute of Electrical and Electronics Engineers (IEEE) Society on the Social Implications of Technology (SSIT) was founded in 1972 as the professional society responsible for championing dialogue and inquiry into the intended and unintended, and desirable and undesirable impacts and implications of technology. SSIT focuses on core themes, inclusive of socio-technical systems, specifically through a dedicated technical committee established in 2022. In this open discussion, the role of SSIT in addressing societal challenges, and SSIT's Socio-Technical Systems Committee will be discussed, as will its charter and mission.

This session will explore the significance of the socio-technical lens to transdisciplinarity, notably in the context of the theme of the workshop: Securitization for Sustainability of People and Place: A Call to Transdisciplinarity. The socio-technical lens affords a possible means of theorising, exploring and conceptualising securitization through transdisicplinarity, by emphasising public interest technology (PIT) and diverse stakeholder collaboration in a range of context and application areas.

Keywords
socio-technical, lens, transdisciplinary, IEEE SSIT, Society on the Social Implications of Technology, engineers, affiliates

Biographical Notes
Roba Abbas is a Senior Lecturer (Operations and Systems) and Academic Program Director with the Faculty of Business and Law at the University of Wollongong, Australia, and more recently a visiting Professor with the School for the Future of Innovation in Society at Arizona

State University, USA. She is also a Co-Editor of the IEEE Transactions on Technology and Society, former Associate Editor of the IEEE Technology and Society Magazine, and Technical Committee Chair of the Socio-Technical Systems Committee of the IEEE. Roba has a PhD in location-based services regulation, and industry experience in web design and development. She has received competitive grants for research addressing global challenges in areas related to co-design and socio-technical systems, operations management, robotics, social media and other emerging technologies. Roba primarily researches methodological approaches to complex socio-technical systems design, emphasising transdisciplinarity, co-design and the intersection of society, technology, ethics, and regulation.

Katina Michael is a professor at Arizona State University, a Senior Global Futures Scientist in the Global Futures Laboratory and has a joint appointment in the School for the Future of Innovation in Society and School of Computing and Augmented Intelligence. She is the director of the Society Policy Engineering Collective (SPEC) and the founding Editor-in-Chief of the IEEE Transactions on Technology and Society. Katina is a senior member of the IEEE and the founding chair of the inaugural Masters of Science in Public Interest Technology. She has been funded by the National Science Foundation (NSF), the Canadian Social Sciences and Humanities Research Council (SSHRC), and the Australian Research Council (ARC). Prior to academia, Katina was employed by Nortel Networks, Anderson Consulting and OTIS Elevator Company.

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Citation: Roba Abbas and Katina Michael, 11 November 2022, "IEEE SSIT Open Discussion on the Socio-Technical Lens and Transdisciplinarity" in Roba Abbas, Mariana Zafeirakopoulos et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In transdisciplinarity, SINS22, securitization
Tags socio-technical, lens, transdisciplinarity, IEEE SSIT, Society on the Social Implications of Technology, engineers, affiliates

Climate Change, Critical Thinking and the New Normal

Speaker
Luis Kun, IEEE SSIT President Elect, USA

Abstract
Currently, climate change is the biggest threat to Society. The US as a microcosm of the world shows: Farmers in the South and Southwest debating what to plant because anything that requires lots of water is no good, while ranchers are deciding to give up their cattle because of lack of water. Many towns in the South with plenty of oil and gas, run out of water because of fracking and had to move out. Lake Mead is running out of water, critical for hydroelectric power as well as drinking water for Las Vegas and the one used for agriculture in California. Meanwhile floods around the Mississippi and plenty of damage from tornados and hurricanes in the South East. October 2022, a worldwide, crisis and emergency management affecting differently every nation on the planet. While hurricanes' landfall In America and the Caribbean, are destroying power lines, telecommunication infrastructure, houses and roads, simultaneously, South-East Asia has not been spared of floods whose patterns are governed by the volume of rain that comes with the summer Monsoon season. Over 40 nations are facing food insecurity because of either floods or drought and fire. In public health, the threats characteristics are of global threats with local impact and local threats with global impact. These affect health, security, education, economy, everything. Globalization, connectivity and speed are fundamentally crucial to the response. Requirements include fast: detection, fast and effective communication, fast and effective integration and fast and effective action. A new way of thinking and acting is necessary to change the effects of climate change. A new "Medici effect" is suggested. The idea is that increased creativity and innovation occurs

through diversity. When ideas and talented people from different fields are brought together to collaborate, step-changes can occur. The idea comes from a book of the same name by Frans Johansson.

Biographical Note
Dr. Luis Kun is the 2022 IEEE President Elect for the Society for Social Implications of Technology and a Distinguished Professor Emeritus of National Security (CHDS/NDU). Born in Montevideo, he graduated from the Merchant Marine Academy in Uruguay and holds a BSEE, MSEE, and PhD degree in BME, all from UCLA. He is an IEEE Life Fellow, a Fellow of the American Institute for Medical and Biological Engineering, the International Academy of Medical and Biological Engineering, and the International Union for Physical and Engineering Sciences in Medicine. He is the founding Editor in Chief of Springer's Journal of Health and Technology 2010-2020. He spent 14 years at IBM and was the Director of Medical Systems Technology at Cedars Sinai Medical Center. As Senior IT Advisor to AHCPR, he formulated the IT vision and was the lead staff for High Performance Computers and Communications program and Telehealth. In July 1997, he was an invited speaker to the White House and was largely responsible for the first Telemedicine Homecare Legislation signed by President Clinton in August 1997. As a Distinguished Fellow at the CDC and an Acting Chief IT Officer for the National Immunization Program, he formulated their IT vision on 10/2000. Dr. Kun received many awards including: AIMBE's first-ever Fellow Advocate Award in 2009; IEEE-USA Citation of Honor Award with a citation, "For exemplary contributions in the inception and implementation of a health care IT vision in the US." In 2009, he was named "Professor Honoris Causa" by Favaloro University, (Argentina) and in 2013 "Distinguished Visitor" by the City of Puebla, Mexico. He served as an IEEE Distinguished Visitor for the CS and as a Distinguished Lecturer (DL) for the Engineering in Medicine and Biology Society and SSIT where he chairs the DL Program since 2016. Since 2014, he serves as an Honorary Professor of the Electrical Engineering Department at the School of Engineering of the University in Montevideo, Uruguay. He received in 2016 the Medal of Merit from Mexico's National Unit of Engineering Associations and was named Visiting Professor by the National Technological University of Buenos Aires, Argentina in 2017.

Keywords
climate change, critical thinking, natural disasters, human-made disasters, insecurity, shortages, critical infrastructure, communications, integration, interdependencies

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- https://www.youtube.com/watch?v=9qWXrOZTnxU&t=115s (SINS21)

Citation: Luis Kun, 11 November 2022, "Climate Change, Critical Thinking and the New Normal" in Roba Abbas, Mariana Zafeirakopoulos et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In SINS22, securitization, transdisciplinarity
Tags climate change, critical thinking, IEEE SSIT, threat, society, USA, water availability, oil, gas, fracking, hydroelectric power, agriculture, tornados, hurricanes, crisis, emergency, emergency management, power lines, telecommunications, infrastructure, houses, roads, monsoon season, food insecurity, floods, droughts, fire, public health, security, education, economy, local impact, global impact, global threats, detection, fast communication, integration, action, new way of thinking, Medici effect, creativity, innovation, diversity, talented people, collaborate, step-changes, Frans Johansson

Vulnerable Infrastructure, Secure Infrastructures?
Speaker
Lindsay Robertson, Tech-Vantage, New Zealand

Abstract

Any discussion of security at global or even national level is pragmatically likely to require the underpinning of security of persons/infrastructure. Without levels of personal and community security, higher levels of security become problematic in either short or long-term. This presentation will briefly consider the scope/nature of some "infrastructure", and present a suite of examples of vulnerable systems that can likely fall within the definition of infrastructure. Possible examples are almost endless and so a useful outcome requires a categorisation of infrastructural vulnerabilities that allows both identification of vulnerability and actions to reduce this. Long-term approaches to the reduction of vulnerability must also consider the drivers that have led to current vulnerabilities and evaluate the costs and implications of any proposals for change. This presentation will consider the technological options for decentralization and hence reduction of population exposure to infrastructural vulnerabilities. Some possible fields of interest for SSIT will also be considered, and in particular concepts of how we might contribute to the identification of vulnerabilities and advocate for measures that promote both robustness and resilience. The presentation will consider the issues of graceful degrade through a hierarchy of societal need-levels, and a resultant capability for rapid recovery from local failures. The presentation will also consider possible future changes to societal infrastructure needs and the alignment of these with likely corporate growth imperatives.

Biographical Note

Lindsay J. Robertson received the B.E. degree in mechanical engineering design and thermal systems from Canterbury University, Canterbury, New Zealand, in 1976, the M.Tech. degree (honors) from Massey University, Palmerston North, New Zealand, in 1990, and the Ph.D. degree from the University of Wollongong, Wollongong, NSW, Australia, in 2017, with a focus on the theme of technological risk, exposure, and resilience. From 1976 to 1987, he held positions with the New Zealand Government. From 1990 to 2007, he was with Fonterra (and NZ Dairy) Research Centre, New Zealand. From 2007 to 2016, he was a Principal Engineer with Parsons Brinckerhoff, New Zealand. Dr. Robertson has been a Fellow within the Institution of Professional Engineers in New Zealand (IPENZ) since 1999 and also within the Institution of Mechanical Engineers (U.K.) since 2013. He was the Editor-in-Chief of IPENZ Transactions from 2002 to 2016.

Keywords

infrastructure, vulnerabilities, technological options, robustness, resilience, recovery, local failures

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Citation: Lindsay Robertson, 11 November 2022, "Vulnerable Infrastructure, Secure Infrastructures?" in Roba Abbas, Mariana Zafeirakopoulos et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In SINS22, transdisciplinarity, securitization
Tags infrastructure, vulnerabilities, technological options, robustness, resilience, recovery, local failures

Necessity, Luxury, or Illegal Protest: A transdisciplinary review of internet access
Speaker
Rob Nicholls

Abstract
A look at rights and obligations in respect to Internet access, especially in the context of the absence of a transdisciplinary view from some states and the assumption that service providers require protection in others (e.g. Iran and the US - s.230).

Keywords
necessity, luxury, illegal protest, transdisciplinary review, internet access, rights, obligations, internet access, service providers, protection

Biographical Note
I am an associate professor in regulation and governance at the UNSW Business School and a visiting professional fellow at UTS Sydney Law. My research interests focus on competition policy, the regulation of networked industries and the financial services sector with an emphasis on the effects of technology in the regulatory space.

I have had a thirty-year career concentrating on competition, regulation and governance. My first degree was in electronics and communications engineering from the University of Birmingham and I was awarded my PhD and MA by UNSW Sydney.

Before moving to academia, I worked for Webb Henderson, the ACCC and spent twelve years as a client-facing consultant at Gilbert + Tobin, including as a partner. I am an accredited mediator and from 2012 to 2020 was Australia's Independent Telecommunications Adjudicator.

Related Works
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- https://www.youtube.com/watch?v=1NV6UmCljCw (UNSW AI Institute, Intro by Rob Nicholls)
- https://www.youtube.com/watch?v=mmVPqs3RHLk&list=PL50XnIfJxPDWEDV7DO9lVvNmIRTglEWwy&index=20 (UNSW)

Citation: Rob Nicholls, 11 November 2022, "Necessity, Luxury, or Illegal Protest: A transdisciplinary review of internet access" in Roba Abbas, Mariana Zafeirakopoulos et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In SINS22, securitization, transdisciplinarity
Tags necessity, luxury, illegal protest, transdisciplinary review, internet access, rights, obligations, service providers, protection

A Transdisciplinary Lens on the Ethical Use of Artificial Intelligence

Speaker
Antonette Shibani, University of Technology, Sydney, Australia

Abstract
Advances in artificial intelligence (AI) and machine learning have profound impact on many parts of the society where key decisions affecting humans are made by algorithms. Examples include the prediction of likely success of a treatment in healthcare, deployment of screening algorithms to hire talents of interest in companies, dissemination of personalized content based on user engagement in social media, and the use of automated tools that assess student performance in education, amongst others. Whilst the opportunities posed by these emerging technologies are eminent, they can also create unintended and covert influences on people to align with the agenda of data-powerful organisations.

In this talk, I will discuss the implications of algorithmic decision making on individuals, organisations and the wider society through a transdisciplinary ethical lens. Applying ethical AI as a nomadic concept that travels across disciplinary boundaries, I will investigate various standpoints to encounter, exchange and debate what it looks like in different contexts. With a general lack of regulation and policy governing this space, such appreciation and conversation on differences can lead to more ethical use of data for a secure society.

Keywords
artificial intelligence, machine learning, data, ethics, transdisciplinary, nomadic concept

Biographical Note

Shibani has a background in computer science engineering and teaches into the Master of Data Science and Innovation course at TD school in UTS. She researches applied areas of data science and artificial intelligence, with a particular focus on education and human-centered data. Her work spans across learning analytics, automated feedback tools, ethical use of artificial intelligence (AI), human-AI complementarity, social media analysis, and more broadly, data for social impact. Much of her research uses text analysis and natural language processing to uncover insights from data along with other qualitative and quantitative methods. Shibani has a strong research profile, and has served as a program committee member and reviewer for a number of conferences and peer-reviewed journals in educational technology. She is an executive member of Society for Learning Analytics Research (SoLAR) and co-hosts the podcast 'SoLAR Spotlight: Conversations on Learning Analytics'. She has a wide authorship network with international collaborators across the globe, with recognition and awards for leadership among early career female academics.

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Citation: Antonette Shibani, 11 November 2022, "A Transdisciplinary Lens on the Ethical Use of Artificial Intelligence" in Mariana Zafeirakopoulos, Roba Abbas et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, transdisciplinarity, SINS22
Tags transdisciplinary, ethical use, AI, machine learning, society, algorithms, healtcare, deployment, screening algorithms, content, user engagement, social media, automated tools, student performance, education, emerging technologies, unintended influnces, covert influences, data-powerful, decision making, organisations, disciplinary boundaries, context, lack of regulation and policy, secure society

Calling in the system - exploring relational ways of knowing for more secure futures
Speaker
Mariana Zafeirakopoulos, University of Technology, Sydney, Australia

Abstract
Strategic Intelligence is a key function of national security. It supports decision-making in government, giving our leaders the advantage on complex and emerging future issues. Whether it be issues with a clear national security mandate like Cybersecurity or terrorism, or issues that operate at the intersections of government systems such as biosecurity, food security, and population health, Strategic Intelligence helps see future harm and risk and makes recommendations to mitigate or remedy these potential harms. However, is this enough to build and maintain a secure future? This talk will offer the idea that working on future emerging issues with interconnections across government systems, requires a different approach. We raise the idea of needing to 'call in' the system to explore how these intersections and relationships affect the whole. By adopting more relational and sensemaking practices, we can begin to shift reductivist approaches that are synonymous with analysis towards more transdisciplinary ways of knowing where different disciplines and ways of knowing (that include the realm of human experience as well as the realm of expertise) can create new knowledge, new ideas and new ways of generating securitisation.

Keywords
transdisciplinarity, sensemaking, abductive reasoning, complex systems, futures research

Biographical Note
Mariana Zafeirakopoulos is a former federal law enforcement public servant, Mariana made the move to private industry to explore transdisciplinary and participatory co-design practice in strategic, emergent and complex contexts. Mariana is undertaking a PhD exploring knowledge

co-production to create more desirable futures in national security contexts. She aims to create new law enforcement intelligence practices that better grapple with emerging, evolving and complex problems like cybersecurity, terrorism and community cohesion. Mariana is also an Adjunct Lecturer in Strategic Intelligence at Charles Sturt University; a Social and Strategic Designer and researcher and currently is an Academic Coordinator at the University of Sydney. Mariana is particularly passionate about designing for the future and using playful and game-based approaches to explore alternate futures with diverse stakeholder groups.

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Citation: Mariana Zafeirakopoulos, 11 November 2022, "Calling in the system - exploring relational ways of knowing for more secure futures" in Mariana Zafeirakopoulos, Roba Abbas et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, SINS22, transdisciplinarity
Tags transdisciplinarity, sensemaking, abductive reasoning, complex systems, futures research, cybersecurity, terrorism, national security, biosecurity, food security, population health, strategic intelligence, harm, risk, recommendations, potential harms, emerging issues, government systems, interconnections, sensemaking practices, reductivist approaches, ways of knowing, disciplines, new knowledge, new ideas, new ways

Cyber-Biosecurity Threats and Risks: Mitigation Challenges and Transdisciplinary Solutions
Speaker
Patrick Walsh, Charles Sturt University, Australia

Abstract

This paper outlines how the rapid transformation of synthetic biology and biotechnology is transforming global health, economic and social wellbeing. In particular it shows how the dual use nature of many synthetic biological processes and products also underscores the potential for advancements to be weaponized with deleterious national security outcomes. The paper will focus on what role 'Five Eyes' intelligence communities can play in managing cyber-biosecurity threats, the challenges in doing so and how ultimately a trans-disciplinary approach involving all stakeholders will ensure more effective threat and risk mitigation.

Keywords
cyberbiosecurity, national security intelligence, biotechnology, threats and risks

Biographical Notes
Dr. Walsh is Associate Professor, Intelligence and Security Studies. He is a former intelligence analyst with experience working in national security and law enforcement agencies in Australia. Prof Walsh is currently a senior researcher at the Australian Graduate School of Policing and Security (AGSPS). He is co-theme leader (emerging threats) for the $140 million government and private sector funded Cooperative Research Centre Cyber Security. He is also Chief Investigator on an ARC Discovery grant ($277, 551) Intelligence and National Security Ethics, Efficacy and Accountability with Professor Seamus Miller (CSU) and ANU. Prof Walsh has 30 books, book chapters and peer-reviewed articles on intelligence reform/capability, leadership, bio-terrorism, strategic intelligence and intelligence education issues. He has been widely consulted on intelligence capability and training matters in the corrections, policing and national security sectors in Australia and internationally. He is on the editorial board of the premier international peer-reviewed Intelligence and National Security Journal and Honorary Visiting Fellow in the Department of History, Politics and International Relations at the University of Leicester (UK). He has taught widely in Australia and internationally and held leadership roles within Charles Sturt University, including Acting Associate Dean (Research), Faculty of Arts in 2016 and currently co-leader of the Faculty Research Area Public Safety and Security.

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Citation: Patrick Walsh, 11 November 2022, "Cyber-Biosecurity Threats and Risks: Mitigation Challenges and Transdisciplinary Solutions" in Mariana Zafeirakopoulos, Roba Abbas et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, transdisciplinarity, SINS22
Tags cyberbiosecurity, national security intelligence, biotechnology, threats, risks

Why Do We Need "Transdisciplinarity" and What are the Pressures Against It?

Speaker
Marcus Wigan, The University of Melbourne, Australia

Abstract
Marcus Wigan has long contributed to SINS on a variety of subjects: this contribution focuses on the growing importance of multiple disciplines in security, and the mixed treatment of such endeavours in other areas, identifying cultural mismatches and disciplinary gaps as an issue of importance. Drawing on the intermittent success of transdisciplinarity - predominantly in the humanities - and the distinctions between it and multispeciality endeavours, some of the barriers to greater exploitation are considered. Socio Technical studies of the operation of many fields are valuable, but the structures emergent in many areas of academia appear to be working in directions militating against the productive (but often risky) directions that transdisciplinarity will take us.

Keywords
transdisciplinarity, multispeciality, culture, humanities, security

Biographical Note
Marcus Wigan has worked across the boundaries of many disciplines, and continues to do so: an Emeritus Professor of Transport and Information Systems at Edinburgh Napier University, a Visiting Professor in Civil Engineering at Imperial College London, and an Honorary Fellow at the Conservatorium of Music at Melbourne University. Hhe has become in his dotage(see recent mug shot) a serial degree collector: the most recent handful being an IP Law Grad Dip, an International Relations Masters, a Masters in Applied and Professional Ethics- all at the University of Melbourne and research Masters in Musicology from Monash University. (Historical additions include a Grad. Dip. In Organisational Psychology from VUT, Masters in Asian Studies and an MBA from Monash, and an MA and DPhil in Nuclear Physics from

Oxford. Current active research interests include the live history collection of working 1979-99 microcomputers and software (and their social impact, especially a large collection of working expert systems of the era, most Australian), with concurrent studies in digital humanities and Information Ethics. Recent work includes the build up of the Science Fiction Collection at the Monash Library Rare Book Room, analyses of research impact and the support of researchers in their work via the new generation of tools such as ResearchGate and Academia and the span of publication (the years between publication and most recent citation), recent outcomes on the interactions digital hearing aids and music as well as the historical musicology of MIFOH in Australia over 40 years are both over 1000 downloads since 2017 with continuous utilization at the same level since 2017. Most recent publications are on the changes in professional ethics for ITC professions, and the interactions between QALYS,ML and embedded medical devices, and shortly the less obvious uses of chatbots and explanatory AI.Current work is on the roles of expertise and experts in public service and in policy (colloquia and an upcoming book), multi-IP mediated recovered historical digital music repository (for >200GB and growing) of recovered historical MIFOH performances, and in nonlinear eLiterature approaches to biography.

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- https://www.youtube.com/watch?v=TqGMvVwKisI (SINS21)

Citation: Marcus Wigan, 11 November 2022, "Why do we need "transdisciplinarity" and what are the pressures against it?" in Mariana Zafeirakopoulos, Roba Abbas et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, SINS22, transdisciplinarity
Tags transdisciplinarity, multispeciality, culture, humanities, security

Socio-Historical Origins of Securitization

Moderator
Katina Michael, Arizona State University, USA

Session Abstract
Socio-cultural contexts are integral to understanding securitization in-situ. The interconnection between people and place demands that socio-historical origins be understood from a diversity of viewpoints in order for decision-making to happen in the public interest, and the interest of legitimate stakeholders. What are we attempting to securitize? For which peoples? And why? How do we understand the value of that which we are trying to securitize? And how might we go about securitizing? National security interests require an understanding of a variety of dimensions that sit in transdisciplinary domains: culture, beliefs (philosophical, religious, ideological, other), systems of economics, political systems, the formation of administrative borders, freedom of movement, human rights, and more. A simple way to assess securitization priorities is to consult with diverse members of the local community, and to incorporate their needs using a risk-based approach. Annual loss expectancy might well be calculated using qualitative measures that denote what might happen to a community or society if a certain element of their livelihoods was diminished or altogether taken away. History has consistently taught us, that when certain non-harmful practices cannot be maintained due to unforeseen societal pressures of the governing power or non-state actors, that communities are forced to seek places of refuge where they can be autonomous and free. Securitization is a complex endeavor given interdependencies and interconnectedness which hold the very fabric of a society together. Without cultural awareness, there cannot be commensurate securitization, and without socio-historical context our understanding of why things are the way they are, is ultimately reduced. The socio-technical approach provides a unique capability into the incorporation of multidimensional values that bring together the tight coupling between people, place and processes.

Biographical Note
Katina Michael (Senior Member, IEEE) received the Bachelor of Information Technology degree from the School of Mathematical and Computing Science, University of Technology, Sydney, NSW, Australia, in 1996, the Doctor of Philosophy degree in information and communication technology from the Faculty of Informatics, University of Wollongong, Wollongong, NSW, Australia, in 2003, and the Master of Transnational Crime Prevention degree from the Faculty of Law, University of Wollongong in 2009.

Since 2018, she has been a Tenured Professor with the School for the Future of Innovation in Society and the School of Computing and Augmented Intelligence, Arizona State University, Tempe, AZ, USA. She is also the Director for the Society Policy Engineering Collective, and a Senior Global Futures Scientist with the College of Global Futures. She is the Founding Chair of the Master of Science in Public Interest Technology with ASU and has hosted the PIT

Colloquium since 2020. She was a Professor with the School of Computing and Information Technology, University of Wollongong from 2002 to 2020 and the Associate Dean (International) of the Faculty of Engineering and Information Sciences, University of Wollongong from 2013 to 2017 overseeing eight partner and twinning arrangements throughout Asia and the Middle East. She has previously been employed as a Senior Network Engineer with Nortel Networks, Wollongong, from 1996 to 2001. She has also worked as a Systems Analyst with Andersen Consulting, North Sydney, NSW, Australia, and OTIS Elevator Company, Minto, NSW, Australia. She has published hundreds of peer-reviewed papers, over 20 special issues, and authored and edited several books. She researches predominantly in the area of emerging technologies and their ethical, legal, and social implications.

Prof. Michael has received U.S. $7.5 million in national funding from the National Science Foundation, the Canadian Social Sciences Research Council, and the Australian Research Council. The grants have related to the design and manufacture of biomedical devices and implants with the goal to develop use-inspired and human-centered devices; adaptive AI training systems in manufacturing; citizen-centered smart cities and smart living; fostering responsible innovation through critical by design methods, and location-based services regulation. She is the Founding Editor-in-Chief of the IEEE Transactions on Technology and Society, and was formerly the Editor-in-Chief of the IEEE Technology and Society Magazine. She was also a Senior Editor of the IEEE Consumer Technology Magazine from 2015 to 2022, an Editor of the Computer & Security from 2012 to 2013, and the Technical Editor of the Journal of Theoretical and Applied Electronic Commerce Research from 2005 to 2011. She was the Chair of the IEEE International Symposium on Technology and Society from the University of Wollongong in 2010, the University of Toronto in 2013, and Arizona State University in 2020. Most recently, she was the Executive Chair of the IEEE International Symposium on Digital Privacy and Social Media, San Jose, CA, USA, in 2022. She has also convened an international workshop on the Social Implications of National Security (SINS) since 2006 focused on human factors of emerging technologies.

In securitization, socio-historical, SINS22
Tags socio-historical, origins, securitization, socio-cultural, in-situ, people, place, stakeholders, national security, public interest, culture, beliefs, economic systems, political systems, administrative borders, freedom of movement, human rights, risk-based approach, annual loss expectancy, livelihood, interdependencies, multidimensionality, values, processes, socio-technical, complexity, transdisciplinarity

Secure Localization in a Global Software Intensive System

Speaker
Gopal Tadepalli, Anna University, India

Abstract
Life happens at frantic pace. The onset of globalization resulted in increased diversity in the workforce and customers. Localization refers to the adaptation to meet the language, cultural, historical and other requirements of a specific locale. Separating localizable elements to make them add-ons to the globalized preferences is the primary hazard for securitization of people and place. Secure localization is based on:

1. localization based on rich surveillance
2. localization based on the separation of attackers and
3. location confirmation

The author strongly believes that most of the breaches in securitization is seldom due to highly advanced crypt systems. They are due to the coming together of cultural values, belief systems, language, philosophical approaches, and practices in locales.

Keywords
localization, globalization, language, notation, locale

Biographical Note
Dr. T V Gopal obtained his B.E (Electronics and Communications) from Osmania University, Hyderabad in the year 1986. He got his M.Tech (Computer Science) from Hyderabad Central University, Hyderabad in the year 1987. He was awarded the Ph.D in the area of "Distributed Operating Systems" in the year 1996 from the Faculty of Electrical Engineering by Anna University.

Areas of Interest
- Operating Systems
- Cyber Physical Systems
- Distributed Computing
- Usability Engineering
- Information Architecture
- Object Oriented Technologies
- Software Quality
- Nano-Computing
- Science and Spirituality

Gopal TV is an Expert Member of the Editorial Advisory Board of the International Journal of Information Ethics. Dr. T V Gopal has published around 80+ Research Papers. He also has 6

papers in the area of Science and Spirituality. Dr. T V Gopal has authored 4 books and co-edited 10 conference proceedings.

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Citation: Gopal Tadepalli, 11 November 2022, "Secure Localization in a Global Software Intensive System" in Katina Michael et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, SINS22, socio-historical
Tags localization, globalization, language, notation, locale

Vulnerable Agents and State Complexity: Sustainable Development as the Ethical Standard for Securitization

Speaker
Philip Chmielewski, Loyola Marymount University, USA

Abstract
The presentation addresses securitization from the perspective of engineers. Engineers design and craft devices, structures, programs, and systems. They assess risk and pursue the safety, health, and well-being of the public. Their skills are often in the service of securitization

programs. The presentation outlines an ethical analysis of securitization. The tools for this analysis are drawn from Mark Coeckelbergh's philosophy of technology and also from Hannah Arendt's political philosophy. Coeckelbergh's handling of "beings-at-risk", imagination, and relation to the environment provide key modes for addressing securitization. Arendt's parsing of embodiment and the three social dimensions of human activity focus both on vulnerable potencies of persons and also on the multi-level society resulting from their activities. Drawing upon the perspectives of these two figures, sustainable development, as articulated in the Brundtland report, presents a framework that both enables an ethical evaluation of securitization concerning its dangerous need to set up boundaries and that also offers a set of guidelines whereby securitization may be reshaped for the benefit of citizens. The presentation will present examples of the deployment of security technologies with respect to ICT, disease, migrants, and drugs. The offered framework then allows engineers involved with securitization programs to assess their products and systems as well as to direct their risk analysis to aid citizens in achieving well-being. Further, the presentation may assist in the development of securitization studies by stimulating a more diverse, a more international range of scholars it engage in critique and contribution within the field. Finally, the multi-level, person-focused, and participatory approach offered here may well enable more empirical studies to be undertaken in the field.

Keywords
engineering, sustainability, embodiment, risk, environment, ethics, philosophy of technology, political philosophy

Biographical Note
Professor Philip Chmielewski, S.J. is the Sir Thomas More Chair of Engineering Ethics. He joined the LMU faculty in 2002. Previously, he taught at Boston College, the University of Detroit, and Loyola University Chicago. Frequently he has lectured and offered courses in mainland China as well as in Hong Kong. He was the co founder of the Heartland Center for Justice Research. His research currently focuses on developing elements of a framework for international engineering ethics.

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Citation: Philip Chmielewski, 11 November 2022, "Vulnerable Agents and State Complexity: Sustainable Development as the Ethical Standard for Securitization" in Katina Michael et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, SINS22, socio-historical
Tags engineering, sustainability, embodiment, risk, environment, ethics, philosophy of technology, political philosophy

Atticus Finch 5.0: The Critical Role of Elders in Mediating Securitization and Inspiring the Next Generation of Public Interest Technologists

Speaker
Jason Sargent

Abstract
The next generation of public interest technologists are emerging into increasingly complex operating environments where their comprehension of trust will be challenged by deep fakes, misinformation, propaganda and deliberate politicised hate crimes presented as extreme measures, facilitated by sophisticated algorithms and multimedia manipulation software and dispersed through social and mainstream media.

There has never been a greater need for counterbalancing, vetting and common-sensemaking by revered voices to guide and inspire the next generation of PITs in order to enable the vision of Society 5.0 to be realised; a human-centered society that balances economic advancement with the resolution of social problems by a trust-based system that highly integrates cyber and physical spaces. But who are these elders we seek for such critical roles?

This presentation uses the Australian indigenous meaning and characterisation of elders and the constructs of referent objects, securitizing actors and extreme measures taken from Weaver's theory of securitization to explore and suggest 1) how elders can play a role in mediating extreme measures and 2) inspire the next generation of public interest technologists. Names and the justification for the naming of such elders, nominated by 4 cohorts of students undertaking a degree in Australia with a unit of study encompassing public interest technology topics, will be proffered for thought and discussion.

By taking a socio-historical approach to securitization and extreme measures, this presentation will go some ways to capturing the prevailing constructs of these complex times in which they occur.

Atticus Finch 5.0, the 'next gen' needs you now!

Keywords
Society 5.0, environment, complex, propaganda, politicization, multimedia, sensemaking, human-centered, trust, cyber, physical, spaces, socio-historical, public interest technology

Biographical Note
Dr. Jason Sargent is an information systems academic who has spent 20 years bringing people and technology together for a better world. Jason's teaching and research nexus is on the deployment of technology for social impact particularly for humanitarian crises and in support of the United Nations Sustainable Development Goals (UNSDGs). Jason holds technical Diplomas in IT (Network Engineering & PC & Network Support with Distinction). His undergraduate Honours thesis, titled 'The Digital Aid Framework (DAF)', introduced to the field of technology-enabled humanitarian relief a conceptual end-to-end technology integration framework for humanitarian (refugee) relief operations. His Association of Computing Machinery (ACM) Ubiquity article summarising the DAF was subsequently used as course material at the University of California-Davis. Jason's doctoral candidature was based in the University of Sydney's Centre for Research on Computer Supported Learning and Cognition (CoCo Lab), Faculty of Education & Social Work. His thesis explored complexities in attainment of higher education by refugees on the Thai-Burma Border through a trinity of theoretical lenses: social capital, communities of practice and blended learning. His doctoral fieldwork was carried out on the TBB near Mae Pa and Mae Sot, Thailand.

Currently Jason has humanitarian technology projects underway in Pakistan and in India where he supervises a small group of students who work with indigenous communities in the remote Satpuda Ranges of Maharashtra State on projects to improve curriculum delivery, gender equality and farming livelihoods. Jason's work in this domain was recognised through being the recipient of QS-Unisolutions inaugural Global IMPACT award for Best Staff Mobility Experience, Valencia, Spain June 16, 2016. Jason is an Associate Editor for IEEE Transactions on Technology and Society and in 2020, he was humbled to be invited to become an Ambassador for Amnesty International Australia's 'My New Neighbour' campaign, advocating for a fairer community sponsorship program for refugees.

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- https://www.youtube.com/watch?v=nwWl3iVfr24 (SINS20)
- https://www.youtube.com/watch?v=zSVrb571Rn4 (AAG/GeoEthics21)
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Citation: Jason Sargent, 11 November 2022, "Atticus Finch 5.0: The critical role of Elders in mediating securitization and inspiring the next generation of Public Interest Technologists" in Katina Michael et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In securitization, SINS22, socio-historical
Tags Society 5.0, environment, complex, propaganda, politicization, multimedia, sensemaking, human-centered, trust, cyber, physical, spaces, socio-historical, public interest technology, Elders, mediation, inspiration

Democracy, Environment, and Technology - Interactions, Inter-Dependencies, and Implications for Theory, Policy, Practice, and Politics

Speaker
Elias Carayannis

Abstract
Quadruple and Quintuple Helix Innovation Systems aims to optimize the design and operation of modern, democratic societies and economies in a smart, sustainable, inclusive, resilient and efficacious manner via the cyber-physical ecosystems that align with Industry 5.0 and Society 5.0 precepts. In this context, the Quintuple Innovation Helix Framework (part of the Quadruple/Quintuple Innovation Helix or Q2IH) represents the most comprehensive, meaningful and valuable construct and modality as it encompasses the five key core dimensions of modern, sustainable and democratic knowledge economies and societies. These are the Environment, the Civil Society, as well as the Government, University and Industry dimensions. We strongly feel that it is appropriate and even critical, given current events in Europe that starkly highlight the conflict and struggle between democracies and autocracies, to enable, facilitate and even accelerate the further development of an Emerging Unified Theory of Helical Architectures (EUTOHA). The objective would be to bring clarity, coherence and consistency to the process of leveraging the helical architectures to advance and enhance the design of solutions for the digital transformation of modern knowledge economies and societies towards more democratic and sustainable (green) ones.

Biographical Notes
Elias G. Carayannis, PhD, MBA, MScEE
Professor of Science, Technology, Innovation and Entrepreneurship and Director, GWUSB European Union Research Center
Dr. Elias G. Carayannis is Full Professor of Science, Technology, Innovation and Entrepreneurship, as well as co-Founder and co-Director of the Global and Entrepreneurial Finance Research Institute (GEFRI) and Director of the European Union Research Center, (EURC) at the School of Business of the George Washington University in Washington, DC. Dr. Carayannis' teaching and research activities focus on the areas of strategic Government-University-Industry R&D partnerships, technology road-mapping, technology transfer and commercialization, international science and technology policy, technological entrepreneurship and regional economic development. Dr. Carayannis has several publications in the following double-blind, peer-reviewed Journals: Journal of Organizational Behavior, Research Policy, European Journal of Operations Research, Technovation, Operations Research, Omega, Expert Systems and Applications, IEEE Transactions in Engineering Management, Annals of Operations Research, Journal of R&D Management, Technological Forecasting and Social Change, Journal of Engineering and Technology Management, International Journal of Technology Management, Journal of Technology Transfer, Engineering Management Journal,

Journal of Growth and Change, Review of Regional Studies, International Journal of Global Energy Issues, International Journal of Environment and Pollution. He has also published more than sixty books to date on science, technology, innovation and entrepreneurship with Springer, CRC Press, Praeger/Greenwood, Palgrave/MacMillan and Edward Elgar, and has several more projects under contract
(https://www.amazon.com/s?k=elias+carayannis+books&ref=nb_sb_noss).

He is founding Editor-in-Chief of the following Book Series and Major Reference Works: Edward Elgar Book Series on Science, Technology, Innovation and Entrepreneurship; Springer Book Series on Innovation, Technology and Knowledge Management; Palgrave MacMillan Book Series on Democracy, Innovation and Entrepreneurship for Growth; (DIE4Growth), Springer Book Series on Arts, Research, Innovation and Society (ARIS), Springer Journal of the Knowledge Economy; Springer Journal of Innovation and Entrepreneurship: A Systems View Across Time and Space and IGI International Journal of Social Ecology and Sustainable Development; Springer Encyclopedia on Creativity, Invention, Innovation and Entrepreneurship; Springer Handbook on Cyber Defense, Development and Democracy; Edward Elgar Handbook on Artificial Intelligence for Innovation and Entrepreneurship; Edward Elgar Handbook on Cyber Defense, Development, Democracy and Diplomacy; Edward Elgar Handbook on Industrial Innovation Excellence. He is also Associate Editor of the IEEE Transactions on Engineering Management, the International Journal of Innovation and Regional Development and on the Editorial Boards of several academic journals (such as Technological Forecasting and Social Change, the Journal of Knowledge Management and others). He consults for a wide variety technology-driven organizations in both government and the private sector, including the World Bank, the European Commission, the Inter-American Development Bank, the US Agency for International Development, IKED, the National Science Foundation Small Business Innovation Research Program, the National Institute of Standards and Technology Advanced Technology Program, the National Coalition for Advanced Manufacturing (NACFAM), the USN CNO Office, Sandia National Laboratories' New Technological Ventures Initiative, the General Electric Corporate Training & Development Center, Cowen & Co, First Albany International, Entreprises Importfab, and others. He is fluent in English, French, German, Greek, and has a working knowledge of Spanish. He can be found online here: GWU, EURC, ORCID, Google Scholar, Web of Science, Wikipedia

Other Related Works
- By decree or by choice? A case study - Implementing knowledge management and sharing at the education sector of the World Bank Group http://documents.worldbank.org/curated/en/574241468763497022/By-decree-or-by-choice-Acase-study-Implementing-knowledge-management-and-sharing-at-the-education-sector-of-the-World-Bank-Group

- The strategic management of technological learning in project/program management: the role of extranets, intranets and intelligent agents in knowledge generation, diffusion, and leveraging https://www.sciencedirect.com/science/article/pii/S0166497298000650
- Fostering synergies between information technology and managerial and organizational cognition: the role of knowledge management https://www.sciencedirect.com/science/article/pii/S0166497298001011
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- https://www.youtube.com/watch?v=D4J900_woYg (EDAMBA21)
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Citation: Elias Carayannis, 11 November 2022, "Democracy, Environment, and Technology - Interactions, Inter-Dependencies, and Implications for Theory, Policy, Practice, and Politics" in Katina Michael et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In SINS22, securitization, socio-historical
Tags democracy, environment, technology, interactions, interdependencies, implications, theory, practice, policy, politics

Looking at Securitisation as a Sociotechnical Activity: Lessons from a Cold-War Past
Speaker
Theresa Dirndorfer Anderson

Abstract
While it is often said that every generation has to learn from its own mistakes, there is still insight to draw from the stories of those who have ventured before us. This presentation shares snapshots of lived experiences during the Cold War of the last century - as a child of the Central European diaspora, arms control scholar, analyst and diplomat. Spanning continents and disciplines, this personal story seeks to bring together lessons gleaned from both theory and practice. Seeing securitisation as a complex sociotechnical system draws us deeper into the perpetual nature of the pursuit of security. Seeing ourselves in the story may help us to unlock meaningful tools for transdisciplinary sensemaking to take into our futures.

Keywords
securitization, sociotechnical, Cold War, stories, experiences, theory, practice, security, transdisciplinary, sensemaking

Biographical Notes
Theresa Dirndorfer Anderson, Director and Social Informaticist at Connecting Stones. Theresa uses creative, compassionate and contemplative practices to help communities build better digital and data futures. After an earlier career in international security and diplomacy, Theresa shifted her attention to the information sciences. A social informaticist with a PhD in Information Science, she was an academic at the University of Technology Sydney (UTS) for more than 20 years. Her award-winning work as an educator and researcher has engaged with the ever-evolving relationship between people and emerging technologies when working with data and making decisions. In her last role before leaving the university sector, she served as inaugural Director and Associate Professor of the Master of Data Science & Innovation program at UTS. The uniquely transdisciplinary and human-centred curriculum developed

during her tenure continues to prepare ethically-aware graduates for the demands of the data science fields.

As a freelance consultant within her own company, Theresa now focuses on advancing socially-just data policies and building trusted environments for data/AI use. She contributes to the development of reference and actionable frameworks at local and international levels. In 2021, she was appointed to the NSW Government's inaugural Artificial Intelligence Advisory and Review Committee. She is actively contributing to development of an international standard for Data Usage (ISO JTC1/SC32/WG6), serving as a Project Editor. Theresa also sits on the Advisory Board for Resilience Brokers, an international organisation using systems thinking to unlock value and to improve the climate resilience of cities and communities around the world.

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- https://www.facebook.com/AustralianComputerSociety/videos/acs-member-spotlight-associate-professor-theresa-anderson/1120631755064846/ (ACS Member Spotlight)

Citation: Theresa Anderson, 11 November 2022, "Looking at Securitisation as a Sociotechnical Activity: Lessons from a Cold-War Past" in Katina Michael et al., Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The 15th Social Implications of National Security Workshop, IEEE STS Technical Committee together with SPEC of Arizona State University.

In SINS22, securitization, socio-historical
Tags securitization, sociotechnical, Cold War, stories, experiences, theory, practice, security, transdisciplinary, sensemaking

Uberveillance as an Apparatus of Control: Towards Insecurity

Speakers
M.G. Michael, University of Wollongong, Australia
Katina Michael, Arizona State University, USA
Roba Abbas, University of Wollongong, Australia

Abstract
Throughout history, attempts to securitize citizenry has meant that individuals have had to be identified as belonging to a nation state. Identity documents have been used to determine proof of one's citizenship and in issuing necessary welfare and other support services. Large scale events, some of them catastrophic, such as the Boxing Day Tsunami of 2004 that killed 230,000 people, demonstrate the importance of identification in the provision of aid and support to survivors and affected families. But as environmental complexity grows, in the context of cyber-physical-social systems, where events can have global implications, not just local or regional (e.g., pandemic outbreaks), high fidelity solutions have been considered in digitalization to allow for near real-time responses toward harm minimization and risk management. This has taken the form of tagging, tracking, tracing and mapping systems that identify and record and follow people's movements during lockdowns or times of crisis, inventory management systems that monitor and track stock items to ensure usage, search engines that seek to understand online behaviours and search patterns to predict the onset of conditions, social media platforms that perform sentiment analysis, and more.

Despite that large scale flows and community practices are of interest in these application scenarios, the aggregated datasets produced have been generated by a focus on the individual's identity, and specifically, their location, condition and real-time point of view, denoting an uberveillant trajectory. For instance, a mobile phone device, whether smart or feature-phone, allows for a multiplicity of data to be generated at the level of an X and Y coordinate that is associated with the given device that belongs to a particular individual, providing the potential for increased monitoring in a range of contexts, some of which are beyond the intended

purpose. It also points to the potential for more invasive technologies that are embedded either in edge devices or in the human themselves.

The undesirable implications of such monitoring are not only experienced by the individual, but also by their immediate relations and networks, even if the focus is on monitoring or surveillance for care. In the hope of reducing risk to citizens by a magnitude, we are introducing commensurate vulnerabilities, threats, and exposures that may not threaten merely our physical bodies but our metaphysical selves. Each person is unique, and excessive securitization in multiple contexts may lead paradoxically to insecurity. How to respond to such a dilemma is a case in question.

This presentation will be broken down into three parts: (1) a definition of uberveillance as originally coined by MG Michael, (2) understanding uberveillance as an apparatus of control in application, and (3) the paradox of insecurity.

Keywords
uberveillance, control, technology, person, security, insecurity, securitization

Biographical Notes
Dr M.G. Michael Ph.D. (ACU), M.A (Hons) (MacqUni), M.Theol (SydUni), B.Theol (SCD), B.A.(SydUni), DipProfCouns (AIPC) is an Honorary Associate Professor in the School of Information Systems and Technology at the University of Wollongong, NSW, Australia. Michael is a theologian and historian with cross-disciplinary qualifications in the humanities and who introduced the concept of überveillance into the privacy and bioethics literature. Michael brings with him a unique perspective to Emerging Technologies. His formal studies include Ancient History, Theology, General Philosophy, Political Sociology, Ethics, Linguistics, and Government. He was previously the coordinator of Information & Communication Security Issues at the University of Wollongong and since 2005 has guest-lectured and tutored in Location-Based Services, IT & Citizen Rights, Principles of eBusiness, and IT & Innovation. The focus of his current research extends to modern hermeneutics and the Apocalypse of John; the historical antecedents of modern cryptography; the auto-ID trajectory; data protection, privacy and ethics related issues; biometrics, RFID and chip implants; national security and government policy; dataveillance and überveillance; and more broadly the system dynamics between technology and society. Michael is a member of the American Academy of Religion (AAR) and a life member of the Australian Privacy Foundation (APF). He has guest edited the December 2006 volume of Prometheus, several IEEE Technology and Society Magazine issues in 2010-11, an issue for Information Technology Cases (2011) and more recently the Journal of Location-Based Services. He is also the proceedings editor of four national security workshops sponsored by the Australian Research Council's Research Network for a Secure Australia (RNSA).

Katina Michael is a professor at Arizona State University, a Senior Global Futures Scientist in the Global Futures Laboratory and has a joint appointment in the School for the Future of Innovation in Society and School of Computing and Augmented Intelligence. She is the director of the Society Policy Engineering Collective (SPEC) and the founding Editor-in-Chief of the IEEE Transactions on Technology and Society. Katina is a senior member of the IEEE and the founding chair of the inaugural Masters of Science in Public Interest Technology. She has been funded by the National Science Foundation (NSF), the Canadian Social Sciences and Humanities Research Council (SSHRC), and the Australian Research Council (ARC). Prior to academia, Katina was employed by Nortel Networks, Anderson Consulting and OTIS Elevator Company.

Roba Abbas is a Senior Lecturer (Operations and Systems) and Academic Program Director with the Faculty of Business and Law at the University of Wollongong, Australia, and more recently a visiting Professor with the School for the Future of Innovation in Society at Arizona State University, USA. She is also a Co-Editor of the IEEE Transactions on Technology and Society, former Associate Editor of the IEEE Technology and Society Magazine, and Technical Committee Chair of the Socio-Technical Systems Committee of the IEEE. Roba has a PhD in location-based services regulation, and industry experience in web design and development. She has received competitive grants for research addressing global challenges in areas related to co-design and socio-technical systems, operations management, robotics, social media and other emerging technologies. Roba primarily researches methodological approaches to complex socio-technical systems design, emphasising transdisciplinarity, co-design and the intersection of society, technology, ethics, and regulation.

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